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EXAMINER

SCHNURR, JOHN R

ART UNIT	PAPER NUMBER
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2623

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/666,646	Applicant(s) BASAWAPATNA ET AL.	
	Examiner John R. Schnurr	Art Unit 2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>See Continuation Sheet</u> . | 6) <input type="checkbox"/> Other: _____ |

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :05/19/2005, 07/07/2004, 07/26/2007.

DETAILED ACTION

1. This Office Action is in response to Application No. 10/666,646 filed 09/17/2003.

Claims 1-29 are pending and have been examined.

2. The information disclosure statements (IDS) submitted on 07/07/2004 and 05/19/2005 were considered by the examiner.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: Video Distribution System 10. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-3, 7, 13, 16-19 and 24-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Utsumi et al. (US Patent 5,729,281)**, herein Utsumi, in view of **Bigham et al. (US Patent 5,740,075)**, herein Bigham.

Consider **claim 1**, Utsumi clearly teaches a cable distribution system, (**Fig. 2 column 7 lines 16-32**) comprising:

a headend; (**Fig. 2: Center station 1, column 7 lines 18-29**)

a plurality of service modules (**Fig. 2: Selective distribution station 10₁, see detail at Fig. 3**) associated with the headend, each service module receiving one or more of the multiplexed channel signals and providing it to each of a plurality of frequency converters within each service module that each convert one of the video channels to a predetermined frequency, (**column 7 line 33 to column 8 line 2**) the predetermined output frequency of each frequency converter in a given service module being different from each other, (**column 7 lines 48-51**) each of the converted video channels created by a given service module being combined together into a single signal; (**Fig. 3: Multiplexing portion 14, column 7 lines 60-62**) and

a plurality of interface units (**Fig. 2 Subscriber devices 71₁-71_N**) associated with each service module, each interface unit being located at a customer location, each interface unit receptive of the single signal from the service module, the interface unit passing only one of the video channels in the single signal to a video displaying apparatus. (**column 8 lines 20-46**)

Utsumi clearly discloses a headend. However, Utsumi does not explicitly teach a headend receptive of signals from a plurality of video sources, the headend including a plurality of receiver/decoders that are each controllable to receive/decode a selected video channel and provide the video channel at a selected frequency, selected ones of the plurality of video channels being multiplexed together to create one or more multiplexed channel signals.

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In an analogous art Bigham, which discloses a system for distributing broadcast information, clearly teaches:

a headend receptive of signals from a plurality of video sources, **(Fig. 6 VNH 2104, column 40 lines 12-26)** the headend including a plurality of receiver/decoders that are each controllable to receive/decode a selected video channel and provide the video channel at a selected frequency, **(column 40 lines 27-55)** selected ones of the plurality of video channels being multiplexed together to create one or more multiplexed channel signals; **(column 43 lines 48-65)**

Therefore, at the time the invention was made, it would have been obvious to one with ordinary skill in the art to modify the system of Utsumi by including a plurality of receiver/decoders that are each controllable to receive/decode a selected video channel and provide the video channel at a selected frequency, selected ones of the plurality of video channels being multiplexed together to create one or more multiplexed channel signals, as taught by Bigham, for the benefit of providing users with access to multiple providers (see column 4 lines 16-24 Bigham).

Consider **claim 2**, Utsumi combined with Bigham, as in claim 1, clearly teaches the headend is a local headend located in a building or set of buildings where the customer locations are. **(Fig. 6 column 40 lines 12-26 Bigham)**

Consider **claim 3**, Utsumi combined with Bigham, as in claim 1, clearly teaches the system of claim 2.

However, Utsumi combined with Bigham, as in claim 1, does not explicitly teach a regional headend located at a location remote from the building or set of buildings, the regional headend providing video channels at selected frequencies to the local headend.

Bigham further teaches a regional headend located remote from the local headend, which provides video channels to the local headend. **(Fig. 5 Broadcast consolidation system 2100, column 35 lines 32-36, column 35 lines 44-54 and column 38 lines 7-9)**

Therefore, at the time the invention was made, it would have been obvious to one with ordinary skill in the art to modify the system of Utsumi and Bigham by utilizing a regional headend to provide video to the local headend, as taught by Bigham, for the benefit of processing programming from video information providers prior to distributing the programming to local headends in a cable distribution network.

Consider **claim 7**, Utsumi combined with Bigham, as in claim 1, clearly teaches cabling running between the headend and each of the plurality of service modules associated therewith, the cabling having sufficient bandwidth capacity to be able to efficiently carry signals at least as high as 750 MHz. **(Fig. 6 Optical fiber 2156 inherently discloses cabling capable of carrying a signal of 750Mhz, column 43 lines 61-65 Bigham.)**

Consider **claim 13**, Utsumi combined with Bigham, as in claim 1, clearly teaches each of the frequency converters in each of the plurality of service modules is a programmable converter. **(Fig. 3 modulating portions 13₁ to 13_N, column 7 lines 45-51 and column 8 lines 29-37 Utsumi)**

Consider **claim 16**, Utsumi combined with Bigham, as in claim 1, clearly teaches each interface unit does not include a frequency converter. **(Fig. 2: Subscriber devices 71 do not include frequency converters.)**

Consider **claim 17**, Utsumi combined with Bigham, as in claim 1, clearly teaches each service module utilizes the same predetermined frequencies as each other service module. **(column 8 lines 11-13 Utsumi)**

Consider **claim 18**, Utsumi combined with Bigham, as in claim 1, clearly teaches each receiver/decoder receives and decodes a given video channel and that channel from that receiver/decoder can be displayed on every video displaying apparatus associated with that local headend. **(column 8 lines 20-46, where subscriber devices 71₁ to 71_N can select a certain programming channel which can be displayed on receiving devices 31₁ to 31_N, Utsumi.)**

Consider **claim 19**, Utsumi combined with Bigham, as in claim 1, clearly teaches the interface module passes information back upstream to its associated service module that includes channel selection information. **(column 8 lines 20-30 Utsumi)**

Consider **claim 24**, Utsumi clearly teaches a cable distribution system, **(Fig. 2 column 7 lines 16-32)** comprising:

a headend; **(Fig. 2: Center station 1, column 7 lines 18-29)**

a plurality of service modules **(Fig. 2: Selective distribution station 10₁, see detail at Fig. 3)** associated with the headend, each service module receiving one or more of the multiplexed channel signals and providing it to each of a plurality of frequency converters within each service module that each convert one of the video channels to a predetermined frequency, **(column 7 line 33 to column 8 line 2)** and create a signal containing that video channel; **(Fig. 3: Multiplexing portion 14, column 7 lines 60-62)**

a plurality of interface units (**Fig. 2 Subscriber devices 71₁-71_N**) associated with each service module, each interface unit being located at a customer location, each interface unit receptive of the single signal from the service module, the interface unit passing only one of the video channels in the single signal to a video displaying apparatus. (**column 8 lines 20-46**)

Utsumi clearly discloses a headend. However, Utsumi does not explicitly teach a headend receptive of signals from a plurality of video sources, the headend including a plurality of receiver/decoders that are each controllable to receive/decode a selected video channel and provide the video channel at a selected frequency, selected ones of the plurality of video channels being multiplexed together to create one or more multiplexed channel signals.

In an analogous art Bigham, which discloses a system for distributing broadcast information, clearly teaches:

a headend receptive of signals from a plurality of video sources, (**Fig. 6 VNH 2104, column 40 lines 12-26**) the headend including a plurality of receiver/decoders that are each controllable to receive/decode a selected video channel and provide the video channel at a selected frequency, (**column 40 lines 27-55**) selected ones of the plurality of video channels being multiplexed together to create one or more multiplexed channel signals; (**column 43 lines 48-65**)

Therefore, at the time the invention was made, it would have been obvious to one with ordinary skill in the art to modify the system of Utsumi by including a plurality of receiver/decoders that are each controllable to receive/decode a selected video channel and provide the video channel at a selected frequency, selected ones of the plurality of video channels being multiplexed together to create one or more multiplexed channel signals, as taught by Bigham, for the benefit of providing users with access to multiple providers (see column 4 lines 16-24 Bigham).

Consider **claim 25**, Utsumi combined with Bigham clearly teaches the system of claim 24.

However, Utsumi combined with Bigham, as in claim 24, does not explicitly teach the cabling between the service modules and the interface units is in a home run architecture.

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Utsumi further teaches the cabling between the service modules and the interface units is in a home run architecture. **(Fig. 1 column 5 line 60 to column 6 line 1)**

Therefore, at the time the invention was made, it would have been obvious to one with ordinary skill in the art to modify the system of Utsumi and Bigham by utilizing a home run architecture between the service modules and interface units, as taught by Utsumi, for the benefit of enhanced reliability of signal delivery where a disruption in one signal does not disrupt the delivery of signals to the remaining lines in the system.

Consider **claim 26**, Utsumi combined with Bigham, as in claim 24, clearly teaches cabling between the service modules and the interface units is in a loop through architecture. **(Fig. 2 column 7 lines 16-24)**

Consider **claim 27**, Utsumi clearly teaches a cable distribution system, **(Fig. 2 column 7 lines 16-32)** comprising:

a headend; **(Fig. 2: Center station 1, column 7 lines 18-29)**

a plurality of service modules **(Fig. 2: Selective distribution station 10₁, see detail at Fig. 3)** associated with the headend, each service module receiving one or more of the multiplexed channel signals and providing it to each of a plurality of frequency converters within each service module that each convert one of the video channels to a predetermined frequency, **(column 7 line 33 to column 8 line 2)** the predetermined output frequency of each frequency converter in a given service module being different from each other, **(column 7 lines 48-51)** each of the converted video channels created by a given service module being combined together into a single signal; **(Fig. 3: Multiplexing portion 14, column 7 lines 60-62)** and

a plurality of interface units **(Fig. 2 Subscriber devices 71₁-71_N)** associated with each service module, each interface unit being located at a customer location, each interface unit receptive of the single signal from the service module, the interface unit passing only one of the video channels in the single signal to a video displaying apparatus. **(column 8 lines 20-46)**

wherein each of the local service modules utilizes frequencies for its respective frequency converters that are identical to the frequencies utilized by each other local service modules. **(column 8 lines 11-13 Utsumi)**

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Utsumi clearly discloses a headend. However, Utsumi does not explicitly teach a headend receptive of signals from a plurality of video sources, the headend including a plurality of receiver/decoders that are each controllable to receive/decode a selected video channel and provide the video channel at a selected frequency, selected ones of the plurality of video channels being multiplexed together to create one or more multiplexed channel signals.

In an analogous art Bigham, which discloses a system for distributing broadcast information, clearly teaches:

a headend receptive of signals from a plurality of video sources, **(Fig. 6 VNH 2104, column 40 lines 12-26)** the headend including a plurality of receiver/decoders that are each controllable to receive/decode a selected video channel and provide the video channel at a selected frequency, **(column 40 lines 27-55)** selected ones of the plurality of video channels being multiplexed together to create one or more multiplexed channel signals; **(column 43 lines 48-65)**

Therefore, at the time the invention was made, it would have been obvious to one with ordinary skill in the art to modify the system of Utsumi by including a plurality of receiver/decoders that are each controllable to receive/decode a selected video channel and provide the video channel at a selected frequency, selected ones of the plurality of video channels being multiplexed together to create one or more multiplexed channel signals, as taught by Bigham, for the benefit of providing users with access to multiple providers (see column 4 lines 16-24 Bigham).

Consider **claim 28**, Utsumi clearly teaches a cable distribution system, **(Fig. 2 column 7 lines 16-32)** comprising:

a headend; **(Fig. 2: Center station 1, column 7 lines 18-29)**

a plurality of local service modules located within the building or set of buildings **(Fig. 2: Selective distribution station 10, is located between the subscriber and the headend, which may be in the vicinity of the building, see detail at Fig. 3)** and associated with the headend, each local service module receiving one or more of the multiplexed channel signals and providing it to each of a plurality of frequency converters that each convert one of the video channels to a predetermined frequency, **(column 7 line 33 to column 8 line 2)** the predetermined output frequency of each frequency converter in a given local service module being different from each other, **(column 7 lines 48-51)** each of the converted video channels created by a given local service module being

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combined together into a single signal; **(Fig. 3: Multiplexing portion 14, column 7 lines 60-62)**

a plurality of interface units **(Fig. 2 Subscriber devices 71₁-71_N)** associated with each local service module, each interface unit being located at a customer location within the building or set of buildings, each interface unit receptive of the single signal from the local service module, the interface unit passing only one of the video channels in the single signal to a video displaying apparatus. **(column 8 lines 20-46)**

Utsumi clearly discloses a headend. However, Utsumi does not explicitly teach a headend receptive of signals from a plurality of video sources, the headend including a plurality of receiver/decoders that are each controllable to receive/decode a selected video channel and provide the video channel at a selected frequency, selected ones of the plurality of video channels being multiplexed together to create one or more multiplexed channel signals.

a local headend located in one of the vicinity of or within a building or set of buildings, the local headend being receptive of signals from a plurality of video sources including signals from the regional headend, the local headend including a plurality of receiver/decoders that are each controllable to receive/decode a selected video channel and provide the video channel at a selected frequency, selected ones of the plurality of video channels being multiplexed together to create one or more multiplexed channel signals;

In an analogous art Bigham, which discloses a system for distributing broadcast information, clearly teaches:

a local headend located in one of the vicinity of or within a building or set of buildings, the local headend receptive of signals from a plurality of video sources, **(Fig. 6 VNH 2104, column 40 lines 12-26)** the local headend including a plurality of receiver/decoders that are each controllable to receive/decode a selected video channel and provide the video channel at a selected frequency, **(column 40 lines 27-55)** selected ones of the plurality of video channels being multiplexed together to create one or more multiplexed channel signals; **(column 43 lines 48-65)**

Therefore, at the time the invention was made, it would have been obvious to one with ordinary skill in the art to modify the system of Utsumi by including a plurality of receiver/decoders that are each controllable to receive/decode a selected video channel and provide the video channel at a selected frequency, selected ones of the plurality of video channels being multiplexed together to create one or more multiplexed channel signals, as taught by Bigham, for the

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benefit of providing users with access to multiple providers (see column 4 lines 16-24 Bigham).

However, Utsumi combined with Bigham, as in claim 1, does not explicitly teach a regional headend located at a location remote from the building or set of buildings, the regional headend providing video channels at selected frequencies to the local headend.

Bigham further teaches a regional headend located remote from the local headend, which provides video channels to the local headend. **(Fig. 5 Broadcast consolidation system 2100, column 19 lines 51-54, column 35 lines 32-36, column 35 lines 44-54 and column 38 lines 7-9)**

Therefore, at the time the invention was made, it would have been obvious to one with ordinary skill in the art to modify the system of Utsumi and Bigham by utilizing a regional headend to provide video to the local headend, as taught by Bigham, for the benefit of processing programming from video information providers prior to distributing the programming to local headends in a cable distribution network.

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Utsumi et al. (US Patent 5,729,281)** in view of **Bigham et al. (US Patent 5,740,075)**, as applied to claim 1 above, and further in view of **Goodman (US Patent 6,192,399)**.

Consider **claim 4**, Utsumi combined with Bigham, as in claim 1, clearly teaches the system of claim 2.

However, Utsumi combined with Bigham, as in claim 1, does not explicitly teach the plurality of service modules are dispersed throughout the building or set of buildings, there being at least one service module for each floor of the building or set of buildings.

In an analogous art Goodman, which discloses a system for video distribution in a multiple dwelling unit, clearly teaches placing intermediate distribution interfaces on each floor of a building. **(column 7 lines 53-58)**

Therefore, at the time the invention was made, it would have been obvious to one with ordinary skill in the art to modify the system of Utsumi combined with Bigham, as in claim 1, by placing a service module on each floor, as taught by Goodman, for the benefit of providing service to units on that floor.

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7. Claims **5 and 6** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Utsumi et al. (US Patent 5,729,281)** in view of **Bigham et al. (US Patent 5,740,075)**, as applied to claim 1 above, and further in view of **Chen et al. (US Patent 5,699,105)**, herein Chen.

As for **claim 5**, the teachings of Utsumi in view of Bigham are relied upon as discussed above. Although Utsumi discloses cabling running between each service module and the plurality of interface units, Utsumi in view of Bigham fails to specifically disclose the cabling being bandwidth limited so as to not efficiently carry signals appreciably above 350 MHz, as claimed.

However, Chen, in an analogous art, teaches coaxial cable links from service modules to interface units utilizing relatively narrow bandwidth cabling (e.g., a 5 to 50 MHz link) (**col. 5, lines 9-26; col. 6, lines 1-9**). The use of narrow bandwidth cabling, such as cabling of a lower grade, presents a greater signal attenuation to higher transmission frequencies, and thus provides the benefit of lower cost for implementation of a transmission network from a service module (i.e., node) to subscriber premises where cabling capable of transmitted high bandwidth signals is not needed.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the cabling of Utsumi in view of Bigham to incorporate the cabling being bandwidth limited so as to not efficiently carry signals appreciably above 350 MHz, as taught by Chen, for the benefit of lower cost for implementation of a transmission network from a service module to subscriber premises when cabling capable of transmitting high bandwidth signals is not needed in a cable distribution system.

The limitation of **claim 6** is encompassed by the teachings of Utsumi in view of Bigham, further in view of Chen. Specifically, Chen teaches metallic coaxial cabling (**col. 5, lines 9-26; col. 6, lines 1-9, where coaxial cable is inherently metallic in order to electrically conduct a signal**).

8. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Utsumi et al (Utsumi), U.S. Patent No. 5,729,281 in view of Bigham et al. (Bigham), U.S. Patent

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No. 5,740,075) as applied to claim 1, further in view of Rakib, U.S. Patent Publication

No. US 2002/0019984 A1.

As for claim 8, the teachings of Utsumi in view of Bigham are relied upon as discussed above. The combination of Utsumi in view of Bigham fails to disclose the headend including a block of Personal Video Recorders.

However, Rakib, in an analogous art, teaches a headend comprising a block of personal video recorders (Fig. 6, Hard Disk Array 289, see paragraphs 96-97) for the benefit of reduced consumer costs in the provision of TIVO like functions by utilizing hardware located at a headend (see paragraph 7).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the headend of Utsumi in view of Bigham to incorporate a block of personal video recorders, as taught by Rakib, for the benefit of reduced consumer costs in the provision of TIVO like functions by utilizing hardware located at a headend in a cable distribution system.

9. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Utsumi et al (Utsumi), U.S. Patent No. 5,729,281 in view of Bigham et al. (Bigham), U.S. Patent No. 5,740,075) as applied to claim 1, further in view of Dunn et al. (Dunn), U.S. Patent No. 5,721,829.

As for claim 9, the teachings of Utsumi in view of Bigham are relied upon as discussed above relative to claim 1. The combination of Utsumi in view of Bigham fails to disclose the headend including a video on demand server, as claimed.

However, Dunn, in an analogous art teaches a headend including a video on demand server (Fig. 1, Continuous Media Server 40, col. 2, lines 40-50, col. 3, lines 13-19, col. 3, lines 43-63) for the benefit of allowing viewers to order video content and watch the content on their own time schedule (see col. 1, lines 63-67).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the headend of Utsumi in view of Bigham to incorporate a video on demand server, as taught by Dunn, for the benefit of allowing viewers to order video content

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and watch the content on their own time schedule in a cable distribution system.

10. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Utsumi et al (Utsumi), U.S. Patent No. 5,729,281 in view of Bigham et al. (Bigham), U.S. Patent No. 5,740,075) as applied to claim 1, further in view of Fries, U.S. Patent No. 6,317,885.

As for claim 10, the teachings of Utsumi in view of Bigham are relied upon as discussed above relative to claim 1. The combination of Utsumi in view of Bigham fails to disclose the headend including a personal computer, as claimed.

However, Fries, in an analogous art, teaches a headend including a personal computer (Fig. 1, Interactive Information Server 46 comprising rack mounted personal computer; col. 3, line 66 - col. 4, line 28) for the benefit of providing an interactive entertainment and information system by receiving and storing data from content providers and inserting the data into a cable transmission (see col. 1, lines 65-67 and col. 4, lines 4-16).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the headend of Utsumi in view of Bigham to incorporate a personal computer, as taught by Fries, for the benefit of providing an interactive entertainment and information system by receiving and storing data from content providers and inserting the data into a cable transmission in a cable distribution system.

11. Claims 11, 12 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Utsumi et al (Utsumi), U.S. Patent No. 5,729,281 in view of Bigham et al. (Bigham), U.S. Patent No. 5,740,075) as applied to claim 1, further in view of Nikolich, U.S. Patent Publication No. US 2002/0073431 A1.

As for claim 11, Utsumi in view of Bigham fails to disclose the headend comprises a DOCSIS frequency converter, as claimed.

However, Nikolich, in an analogous art, teaches a DOCSIS frequency converter located at a headend (Fig. 1B, Modulators 108-1 -

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108-N; paragraphs 27-28, describing frequency conversion of DOCSIS downstream data signals). Including DOCSIS frequency converters at a cable headend provides the typical and well-known benefit of transmitting downstream internet data to subscribers in compliance with an accepted and widely used data transmission standard.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the headend of Utsumi in view of Bigham to incorporate the headend includes a DOCSIS frequency converter, as taught by Nikolich, for the benefit of transmitting downstream internet data to subscribers in compliance with an accepted and widely utilized data transmission standard in a cable distribution system.

The limitation of claim 12 is encompassed by the teachings of Utsumi in view of Bigham, further in view of Nikolich, as discussed above. Specifically, Utsumi discloses data transmitted in channels being converted for passage to the plurality of service modules and associated interface units col. 7, line 33 - col. 8, line 2). Nikolich teaches a DOCSIS frequency converter (paragraphs 27-28, where a converter for converting DOCSIS downstream data for transmission to subscriber equipment, inherently, by compliance with the DOCSIS standard, discloses DOCSIS forward channels for transmission of data).

As for claim 23, the teachings of Utsumi in view of Bigham are relied upon as discussed above relative to claim 1. Utsumi in view of Bigham fails to disclose the headend includes a cable modem transmission system, as claimed.

However, Nikolich, in an analogous art, teaches a headend including a cable modem termination system (Fig. 1A; Cable Modem Termination System 10; paragraph 17) for the benefit of providing multiple downstream data channels with space savings in a single CMTS chassis (see paragraph 8).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the headend of Utsumi in view of Bigham to include a cable modem termination system (CMTS), as taught by Nikolich, for the benefit of providing multiple downstream data channels with space savings in a single CMTS chassis in a cable distribution system.

12. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Utsumi et al (Utsumi), U.S. Patent No. 5,729,281 in view of Bigham et al.

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(Bigham), U.S. Patent No. 5,740,075), as applied to claim 1, further in view of

Ahmed et al. (Ahmed), U.S. Patent No. 6,519,773.

As for claim 14, the teachings of Utsumi in view of Bigham are relied upon as discussed above relative to claim 1. Although Utsumi discloses a plurality of frequency converters (modulating portions 131 to 13N) for producing a multiplexed downstream transmission containing a plurality of user selected channels, the combination of Utsumi in view of Bigham fails to specifically disclose the frequency converters including a different bandpass filter, as claimed.

However, Ahmed, in an analogous art, teaches a plurality of frequency converters each including a different bandpass filter (Fig. 3B, BPF 304A- 304N; col. 7, line 45 - col. 8, line 19). A plurality of bandpass filters provides the typical and well-known benefit of blocking other frequencies not in a specified band in a frequency division multiplexing system comprising a plurality of distinct frequency bands.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the frequency converters of Utsumi in view of Bigham to incorporate a different bandpass filter associated with each frequency converter for the benefit of blocking other frequencies not in a specified band in a frequency division multiplexing system comprising a plurality of distinct frequency bands in a cable distribution system.

13. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Utsumi et al (Utsumi), U.S. Patent No. 5,729,281 in view of Bigham et al.

(Bigham), U.S. Patent No. 5,740,075) as applied to claim 1, further in view of

DeRodeff et al. (DeRodeff), U.S. Patent No. 5,828,403.

As for claim 15, the teachings of Utsumi in view of Bigham are relied upon as discussed above relative to claim 1. Utsumi in view of Bigham fails to disclose each interface unit does not include a microprocessor.

However, DeRodeff, in an analogous art, teaches an interface unit that does not include a microprocessor (Fig. 1, Remote Interface Units 18a and 18b; Fig. 6, providing detail of Remote Interface Unit 18a, comprising elements I-R I/F 74 and RF Modulator 76; see Fig. 7; col. 7,

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lines 17-28) for the benefit of providing an inexpensive interface between a user's television and a common set-top (i.e., service module).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the interface unit of Utsumi in view of Bigham to incorporate each interface unit does not include a microprocessor, as taught by DeRodeff, for the benefit of providing an inexpensive interface between a user's television and a service module in a cable distribution system.

14. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Utsumi et al (Utsumi), U.S. Patent No. 5,729,281 in view of Bigham et al.

(Bigham), U.S. Patent No. 5,740,075), as applied to claim 15, further in view of

Chen et al. (Chen), U.S. Patent No. 5,699,105, further in view of Fellows, et al.,

"DOCSIS Cable Modem Technology," IEEE Communications Magazine, March

2001, Vol. 39, Issue 3, pp. 202-209 (ISSN: 0163-6804) (Fellows).

As for claim 20, the teachings of Utsumi in view of Bigham are relied upon as discussed above relative to claim 15. Utsumi in view of Bigham fails to disclose the information passed back upstream to the service module also includes a DOCSIS return channel that is passed by the service module back to the headend and back to an internet service provider, as claimed.

However, Chen, in an analogous art, teaches passing information back upstream to a service module including data transmissions which are further passed to a headend for communication with an internet service provider for the benefit of providing access to internet based services over a cable network (col. 5, lines 38-41).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the upstream information of Utsumi in view of Bigham to incorporate passing information upstream to the service module that is passed by the service module to the headend and back to an internet service provider, as taught by Chen, for the benefit of providing access to internet based services over a cable network in a cable distribution network.

Although Chen teaches transmitting upstream data via a service module to a headend for communication with an internet service provider,

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Utsumi in view of Bigham, further in view of Chen fails to specifically disclose the upstream information including a DOCSIS return channel, as claimed.

However, Fellows, in an analogous art, teaches transmitting upstream information comprising a DOCSIS return channel (page 204, 2nd col., paragraphs 2-3). Utilizing a DOCSIS return channel in upstream data communications in a cable network provides the typical and well-known benefit of complying with an established data transmission standard and allows for the use of standardized data transceiver devices (e.g., customer cable modems and headend cable modem termination system equipment).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the upstream information of Utsumi in view of Bigham further in view of Chen to incorporate upstream information including a DOCSIS return channel, as taught by Fellows, for the benefit of complying with an established data transmission standard and facilitating the use of standardized data transceiver devices in a cable distribution system.

15. Claims 21, 22 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Utsumi et al (Utsumi), U.S. Patent No. 5,729,281 in view of Bigham et al. (Bigham), U.S. Patent No. 5,740,075) as applied to claim 1, further in view of Kitamura et al. (Kitamura), U.S. Patent No. 6,188,871.

As for claim 21, the teachings of Utsumi in view of Bigham are relied upon as discussed above. Although Utsumi discloses a processor being functional to control the operation of the receivers (Fig. 3, Controlling Portion 17), the combination of Utsumi in view of Bigham fails to disclose the processor and an associated database in communication with the headend and service module, and the database assisting the processor in this functionality and in storing customer viewing preferences.

However, Kitamura, in an analogous art, teaches a processor (Fig. 3, CPU 904) and database (Fig. 3, Database 111) in communication with a headend and service module, the processor controlling the operation of receiver/decoders and the database assisting the processor and storing customer viewing preferences (col. 8, lines 4-9, col. 8, lines 34-51) for the benefit of enabling a subscriber to receive a desired CATV program through a simple receiver (see col. 1, line 65 - col. 2, line 7).

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Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the processor of Utsumi in view of Bigham to incorporate the processor and an associated database in communication with the headend and service module, and the database assisting the processor in this functionality and in storing customer viewing preferences, as taught by Kitamura, for the benefit of enabling a subscriber to receive a desired CATV program through a simple receiver in a cable distribution system.

As for claim 22, the teachings of Utsumi in view of Bigham are relied upon as discussed above. Although Utsumi discloses a processor being functional to control the operation of the receivers (Fig. 3, Controlling Portion 17), the combination of Utsumi in view of Bigham fails to disclose the local service module will only convert a selected video channel to a predetermined output frequency associated with a particular interface unit if that interface unit is authorized to receive that selected channel, as claimed.

However, Kitamura, in an analogous art teaches a local service module which only converts a selected video channel to a predetermined output frequency associated with a particular interface unit if the interface unit is authorized to view the program (Fig. 7, Steps 1-4, see col. 8, lines 34-63). Verifying whether a viewer is entitled to view a program prior to transmitting a program provides the typical and well-known benefit of increasing operator revenues through offering restricted access to premium content for increased subscription fees.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the local service module of Utsumi in view of Bigham to incorporate the only converting a selected video channel to the predetermined output frequency associated with a particular interface unit if that interface unit is authorized to receive the selected video channel, as taught by Kitamura, for the benefit of increasing operator revenues through offering restricted access to premium content for increased subscription fees in a cable distribution system.

As for claim 29, see claim 22.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John R. Schnurr whose telephone number is (571) 270-1458. The examiner can normally be reached on Monday - Friday, 7:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Grant can be reached on (571) 272-7294. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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